## *PROHYSTEROCERAS* SPATH, 1921, AND *NEOKENTROCERAS* SPATH, 1921 (CEPHALOPODA, AMMONOIDEA); PROPOSED DESIGNATION OF TYPE SPECIES IN CONFORMITY WITH ESTABLISHED USAGE. Z.N.(S.) 2254

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Two well-known genera in the widespread ammonite fauna of the Albian stage of the Cretaceous both have by strict application of the Code type species which are contrary to their author's stated intentions and which would (in the one case) or could (in the other) alter the concepts of the genera established for a period of over fifty years.

2. L.F. Spath erected the genus *Prohysteroceras* in the following terms (1921: 286): " . . . and with compressed forms converging towards *Prohysteroceras† goodhalli* on the other" with footnote "†Gen. nov. Genotype *P. wordiei* nov., a new Angola species of the *candollianum-goodhalli* group".

3. *P. wordiei* was only described in 1922 (: 143) and was a *nomen nudum* in 1921; the species was thus ineligible as type species of *Prohysteroceras*. *Ammonites goodhalli* J. Sowerby, 1820 (: 100), on the other hand, was a valid species and was included in *Prohysteroceras* in 1921. Unless Spath's reference to the "*candollianum-goodhalli* group" makes *Ammonites candollianus* Pictet (1847: 361) also an included species, *A. goodhalli* is, under the Code, the type species of *Prohysteroceras* by monotypy.

4. Spath later (1932: 381) designated *Ammonites goodhalli* type species of a new subgenus of *Prohysteroceras* which he named *Goodhallites* and which he also included *A. candollianus*. Strictly speaking, *Goodhallites* is an objective synonym of *Prohysteroceras* (or a subjective synonym if *A. candollianus* were to be treated as an originally included species and were to be designated type species of *Prohysteroceras*). However, *Goodhallites* is a well-known, widespread and distinct taxon and considerable confusion would be caused if it had to be treated as a synonym of *Prohysteroceras sensu stricto*.

5. If established usage is to be preserved, the plenary powers will have to be used, either to designate *Prohysteroceras wordiei* Spath type species of *Prohysteroceras*, although it was only validly published a year after the genus, or to set aside the establishment of the genus *Prohysteroceras* in 1921, although it then included one

(or two) previously described and valid species. The first alternative seems preferable.

6. The case of *Neokentroceras* is similar. Spath introduced the genus in the following terms: (1921: 306) " . . . and *Neokentroceras* (gen. nov.*) *gracillimum* Kossmat sp." with footnote "*A post-*Subschloenbachia* development (Genotype = *N. curvicornu,* nov., from Angola, allied to *N. tectorium,* White sp.)". The following year (Spath, 1922) he described a number of species of *Neokentroceras* from Angola including (1922: 139) *N. curvicornu,* again stated (: 105) to be the type species. That species has since been generally accepted as type species, for example by Haas (1942), Reyment (1955) and Howarth (1965) in works describing species of *Neokentroceras,* and by Basse (1952) and Wright (1957) in textbooks of palaeontology.

7. Unfortunately *N. curvicornu* was not validly described until 1922 and as a *nomen nudum* in 1921 was ineligible as type species. Two valid species, *Schloenbachia gracillima* Kossmat (1895: 188) and *Ammonites tectorius* White (1887: 225), were included in *Neokentroceras* in 1921 and are eligible for selection as type species in place of *curvicornu.* However, *S. gracillima* is almost certainly not congeneric with *N. curvicornu* and *A. tectorius* is possibly not. Thus selection of either as type species would throw doubt on the interpretation of *Neokentroceras.*

8. If stability is to be preserved, therefore, the plenary powers will have to be used either to designate *N. curvicornu* as type species, although it was a *nomen nudum* in 1921, or to set aside the establishment of the genus in 1921 although it then included two valid species. The first alternative seems preferable.

9. The International Commission on Zoological Nomenclature is therefore invited, in order to maintain established usage:

(1) under the plenary powers to
  (a) designate as type species of the genus *Prohysteroceras* Spath, 1921, the species *Prohysteroceras wordiei* Spath, 1922;
  (b) designate as type species of the genus *Neokentroceras* Spath, 1921, the species *Neokentroceras curvicornu* Spath, 1922;

(2) to place the following generic names on the Official List of Generic Names in Zoology:
  (a) *Prohysteroceras* Spath, 1921 (gender: neuter), type species by designation under the plenary powers in (1) (a) above, *Prohysteroceras wordiei* Spath, 1922;
  (b) *Neokentroceras* Spath, 1921 (gender: neuter), type species, by designation under the plenary powers in (1) (b) above, *Neokentroceras curvicornu* Spath, 1922;

(3) to place the following specific names on the Official List of Specific Names in Zoology:
   (a) *wordiei* Spath, 1922, as published in the binomen *Prohysteroceras wordiei* (specific name of type species of *Prohysteroceras* Spath, 1921);
   (b) *curvicornu* Spath, 1922, as published in the binomen *Neokentroceras curvicornu* (specific name of type species of *Neokentroceras* Spath, 1921).

## REFERENCES


BASSE, E. 1952. Classe des Céphalopodes: 461–688 in PIVETEAU, J. [ed.], *Traité de Paléontologie* vol. 2, Problèmes d'adaptation et de phylogénèse (Paris, Masson), 790 pp.

HAAS, O. 1942. The Vernay collection of Cretaceous (Albian) ammonites from Angola. *Bull. Amer. Mus. nat. Hist.*, vol. 81: 1–224.

HOWARTH, M.K. 1965. Cretaceous ammonites and nautiloids from Angola. *Bull. brit. Mus. nat. Hist.* (Geol.), vol. 10: 335–412.

KOSSMAT, F. 1895. Untersuchungen über die südindische Kreideformation. *Beitr. paläont. geol. Ost.-Ung.*, vol. 9: 97–203.

PICTET, F.J. 1847 in PICTET & ROUX, W. Description des mollusques fossiles qui se trouvent dans les Grès Verts des environs de Genève. *Mém. Soc. Phys. Hist. nat. Genève*, vol. 9: 257–412.

REYMENT, R.A. 1955. The Cretaceous ammonites of southern Nigeria and the southern Cameroons. *Bull. geol. Surv. Nigeria*, vol. 25: 112 pp.

SOWERBY, J. 1820 *in* SOWERBY, J. & SOWERBY J. de C., 1812–1846, *The mineral conchology of Great Britain* (London), 7 vols., 648 pls.

SPATH, L.F. 1921. On Cretaceous Cephalopoda from Zululand. *Ann. S. Afr. Mus.*, vol. 12: 217–321.

_____ 1922. On Cretaceous Ammonoidea from Angola, collected by Prof. J.W. Gregory. *Trans. r. Soc. Edinburgh*, vol. 53: 91–160.

_____ 1932. A monograph of the Ammonoidea of the Gault. *Palaeontogr. Soc. Monogr.*: 379–410.

WHITE, C.A. 1887. Contribuções á Paleontologia do Brasil. *Arch. Mus. nac. Rio de Janeiro*, vol. 7: 273 + v pp.

WRIGHT, C.W. 1957. Cretaceous Ammonoidea in ARKELL, W.J. and others, *Treatise on Invertebrate Paleontology*, Part L, Mollusca 4, Cephalopoda, Ammonoidea (Geol. Soc. America and Kansas University Press) 490 pp.